

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/JP2004/019846

 A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 G01N33/68 G01N33/94 A61K38/00 C12N15/11

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C12N G01N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, EMBASE, CHEM ABS Data, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	OHNUMA K ET AL: "Soluble CD26/dipeptidyl peptidase IV induces T cell proliferation through CD86 up-regulation on APCs." JOURNAL OF IMMUNOLOGY (BALTIMORE, MD. : 1950) 15 DEC 2001, vol. 167, no. 12, 15 December 2001 (2001-12-15), pages 6745-6755, XP002323150 ISSN: 0022-1767 page 6745 abstract ----- -/--	

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

4 April 2005

Date of mailing of the international search report

03 -08- 2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 1989, MORIMOTO C ET AL: "1F7 A NOVEL CELL SURFACE MOLECULE INVOLVED IN HELPER FUNCTION OF CD4 CELLS" XP002323154 Database accession no. PREV199089038221 cited in the application abstract & JOURNAL OF IMMUNOLOGY, vol. 143, no. 11, 1989, pages 3430-3439, ISSN: 0022-1767</p>	11,12, 30,31
X	<p>----- DATABASE MEDLINE [Online] US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US; July 2001 (2001-07), HO L ET AL: "In vitro and in vivo antitumor effect of the anti-CD26 monoclonal antibody 1F7 on human CD30+ anaplastic large cell T-cell lymphoma Karpas 299." XP002323155 Database accession no. NLM11448921 abstract & CLINICAL CANCER RESEARCH : AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH. JUL 2001, vol. 7, no. 7, July 2001 (2001-07), pages 2031-2040, ISSN: 1078-0432</p>	11,12, 30,31
X	<p>----- DATABASE MEDLINE [Online] US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US; February 1992 (1992-02), TORIMOTO Y ET AL: "Biochemical characterization of CD26 (dipeptidyl peptidase IV): functional comparison of distinct epitopes recognized by various anti-CD26 monoclonal antibodies." XP002323156 Database accession no. NLM1371820 abstract & MOLECULAR IMMUNOLOGY. FEB 1992, vol. 29, no. 2, February 1992 (1992-02), pages 183-192, ISSN: 0161-5890</p> <p>----- -/--</p>	11,12, 30,31

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 5 February 1999 (1999-02-05), TRIGATTI BERNARDO L ET AL: "Identification of caveolin-1 as a fatty acid binding protein" XP002323157 Database accession no. PREV199900134226 abstract & BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 255, no. 1, 5 February 1999 (1999-02-05), pages 34-39, ISSN: 0006-291X</p> <p>-----</p>	11,12, 30,31
X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 8 July 2003 (2003-07-08), ELLIOTT MICHAEL H ET AL: "Cholesterol-dependent association of caveolin-1 with the transducin alpha subunit in bovine photoreceptor rod outer segments: Disruption by cyclodextrin and guanosine 5'-O-(3-thiotriphosphate)." XP002323158 Database accession no. PREV200300450283 abstract & BIOCHEMISTRY, vol. 42, no. 26, 8 July 2003 (2003-07-08), pages 7892-7903, ISSN: 0006-2960</p> <p>-----</p>	11,12, 30,31
X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 8 December 1997 (1997-12-08), VOLPE FILIPPO ET AL: "The IL1 receptor accessory protein is responsible for the recruitment of the interleukin-1 receptor associated kinase to the IL1/IL1 receptor I complex" XP002323159 Database accession no. PREV199800046238 abstract & FEBS LETTERS, vol. 419, no. 1, 8 December 1997 (1997-12-08), pages 41-44, ISSN: 0014-5793</p> <p>-----</p> <p style="text-align: center;">-/--</p>	11,12, 30,31

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X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; April 1999 (1999-04), NOMURA RYUJI ET AL: "Tyrosine-phosphorylated caveolin-1: Immunolocalization and molecular characterization" XP002323160 Database accession no. PREV199900377056 abstract & MOLECULAR BIOLOGY OF THE CELL, vol. 10, no. 4, April 1999 (1999-04), pages 975-986, ISSN: 1059-1524</p>	11,12, 30,31
X	<p>----- SUNAGA NORIAKI ET AL: "RNAi-mediated knockdown of caveolin-1 and c-myc leads to growth inhibition of human tumor cells." PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH ANNUAL MEETING, vol. 44, July 2003 (2003-07), pages 192-193, XP002323151 & 94TH ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH; WASHINGTON, DC, USA; JULY 11-14, 2003 ISSN: 0197-016X abstract</p>	13-26
X	<p>----- DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 25 July 2003 (2003-07-25), CHO KYUNG A ET AL: "Senescent phenotype can be reversed by reduction of caveolin status." XP002323161 Database accession no. PREV200300419061 abstract & JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 278, no. 30, 25 July 2003 (2003-07-25), pages 27789-27795, ISSN: 0021-9258</p> <p>----- -/--</p>	13-26

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 16 November 2003 (2003-11-16), CHRISTOPHERSON KENT W ET AL: "Suppression or deletion of CD26 (DPPIV) activity on donor cells greatly enhances the efficiency of mouse hematopoietic stem & progenitor cell homing and engraftment in vivo." XP002323162 Database accession no. PREV200400180998 abstract & BLOOD, vol. 102, no. 11, 16 November 2003 (2003-11-16), page 38a, 45TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF HEMATOLOGY; SAN DIEGO, CA, USA; DECEMBER 06-09, 2003 ISSN: 0006-4971</p>	13, 18-20,26
X	<p>----- DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 12 July 2002 (2002-07-12), MARELLA MATHIEU ET AL: "Filipin prevents pathological prion protein accumulation by reducing endocytosis and inducing cellular PrP release" XP002323163 Database accession no. PREV200200467964 abstract & JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 277, no. 28, 12 July 2002 (2002-07-12), pages 25457-25464, ISSN: 0021-9258</p>	13, 18-20,26
X	<p>----- BURNS K ET AL: "Tollip, a new component of the IL-1RI pathway, links IRAK to the IL-1 receptor" NATURE CELL BIOLOGY, MACMILLAN PUBLISHERS, GB, vol. 2, no. 6, June 2000 (2000-06), pages 346-351, XP002304736 ISSN: 1465-7392 the whole document</p> <p>----- -/--</p>	13-26

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; March 2003 (2003-03), SOONG GRACE ET AL: "Selective recruitment of toll like receptor components mediates airway epithelial responses to bacteria." XP002323164 Database accession no. PREV200300295564 abstract & FASEB JOURNAL, vol. 17, no. 4-5, March 2003 (2003-03), pages Abstract No. 405.5 URL-http://ww, FASEB MEETING ON EXPERIMENTAL BIOLOGY: TRANSLATING THE GENOME; SAN DIEGO, CA, USA; APRIL 11-15, 2003 ISSN: 0892-6638</p>	
A	<p>----- MARTIN MICHAEL U ET AL: "Summary and comparison of the signaling mechanisms of the Toll/interleukin-1 receptor family." BIOCHIMICA ET BIOPHYSICA ACTA, vol. 1592, no. 3, 11 November 2002 (2002-11-11), pages 265-280, XP002323152 ISSN: 0006-3002 page 272; figure 4 abstract page 265</p>	
P,X	<p>----- OHNUMA KEI ET AL: "CD26 up-regulates expression of CD86 on antigen-presenting cells by means of caveolin-1." PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA. 28 SEP 2004, vol. 101, no. 39, 28 September 2004 (2004-09-28), pages 14186-14191, XP002323153 ISSN: 0027-8424 the whole document</p> <p>-----</p>	1-31

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Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1, 3-15, 18-21, 26, 27, 29-35 (all partially); 2, 16, 17, 22-25
28 (all completely)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,3-15,18-21,26, 27,29-35 (all partially);
2,16,17,22-25,28 (all completely)

A method of identifying a substance that down-regulates / up-regulates an immune response in an animal, comprising determining whether the substance inhibits / enhances an interaction between CD26 and caveolin-1, between calveolin-1 and Tollip, or between caveolin-1, Tollip, and IRAK-1, or whether the substance inhibits / enhances phosphorylation of caveolin-1; a kit for identifying such substances; use of such substances; such substances per se

2. claims: 1,3-15,18-21,26,27,29-35 (all partially)

A method of identifying a substance that down-regulates / up-regulates an immune response in an animal, comprising determining whether the substance inhibits / enhances phosphorylation of IRAK-1; a kit for identifying such substances; use of such substances

3. claims: 1,3-13,15,18-21,26,27,29-32,34,35 (all partially)

A method of identifying a substance that down-regulates / up-regulates an immune response in an animal, comprising determining whether the substance inhibits / enhances activation of NF- KB; a kit for identifying such substances; use of such substances

4. claims: 1,3-13,15,18-21,26,27,29-32,34,35 (all partially)

A method of identifying a substance that down-regulates / up-regulates an immune response in an animal, comprising determining whether the substance inhibits / enhances the up-regulation of CD86 expression; a kit for identifying such substances; use of such substances
